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## APPENDIX B

### PENDING CLAIMS SUBJECT TO EXAMINATION

1. (four times amended) An isolated nucleic acid encoding a polypeptide monomer of a pH sensitive potassium channel, the monomer:
  - (i) forming a potassium channel having a unit conductance of approximately 80-120 pS and having increased potassium channel current activity above approximately intracellular pH of 7.1, when the monomer is expressed in a *Xenopus* oocyte; and
  - (ii) encoded by a nucleic acid that selectively hybridizes under highly stringent hybridization conditions to a nucleic acid comprising a nucleotide sequence of SEQ ID NO:2, , SEQ ID NO:17, or SEQ ID NO:19, wherein the hybridization reaction is incubated at 42°C in a solution comprising 50% formamide, 5x SSC, and 1% SDS and washed at 65°C in a solution comprising 0.2x SSC and 0.1% SDS.
4. (as filed) An isolated nucleic acid of claim 1, wherein the nucleic acid encodes SEQ ID NO:1.
5. (as filed) An isolated nucleic acid of claim 1, wherein the nucleic acid encodes SEQ ID NO:16 or 18.
8. (as filed) An isolated nucleic acid sequence of claim 1, wherein the nucleic acid has a nucleotide sequence of SEQ ID NO:2.
9. (previously once amended) An isolated nucleic acid sequence of claim 1, wherein the nucleic acid has a nucleotide sequence of SEQ ID NO:17, or SEQ ID NO:19.

26. (previously twice amended) An expression vector comprising a nucleic acid of claim 1.

27. (as filed) A host cell transfected with the vector of claim 26.

45. (previously once amended) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer having a calculated molecular weight of between 120-156 kDa, the molecular weight calculated from amino acid sequence.

46. (as filed) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer forming a homomeric potassium channel.

47. (as filed) The nucleic acid of claim 1, wherein the nucleic acid encodes a polypeptide monomer forming a heteromeric potassium channel.